UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,022	03/19/2001	Richard L. Vogel	15-0208	9335

23446 7590 02/23/2005

MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER	
TON, ANTHONY T	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/812,022	VOGEL ET AL.	
	Examiner	Art Unit	
	Anthony T Ton	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,12-16,21-28,32-36,38 and 41-46* is/are rejected.

7)☒ Claim(s) *9-11,17-20,29-31,37,39 and 40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

PHIRIN SAM
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. **The disclosure** is objected to because of the following informalities:

Term "**the system, the system**" in page 15 lines 3-4 is improper since the term "the system" is repeated.

Examiner suggests changing this term to ", **the system**"

Appropriate correction is required.

Claim Objections

2. **Claims 1, 2, 4, 5, 14, 18, 22, 24, 25, 33** and **38** are objected to because of the following informalities:

a) **In Claim 1**: there is no antecedent basic for the limitation "**the** bandwidth release parameters" recited in line 10.

Examiner suggests changing this limitation to "bandwidth release parameters".

b) **In Claim 2**: there is no antecedent basic for the limitation "**the** bandwidth manager" recited in lines 5-6.

Examiner suggests changing this limitation to "**a** bandwidth manager".

c) **In Claim 4** and **Claim 24**: there is no antecedent basic for the limitation "the initial bandwidth **allocation**" recited in line 2.

Examiner suggests changing this limitation to "the initial bandwidth **allocations**".

d) **In Claim 5** and **Claim 25**: there is no antecedent basic for the limitation "**the** need for a fixed bandwidth" recited in line 3.

Examiner suggests changing this limitation to "**a** need for a fixed bandwidth".

e) **In Claim 14**: there is no antecedent basic for the limitation "**the** bandwidth manager" recited in line 3.

Examiner suggests changing this limitation to "**a** bandwidth manager".

f) **In Claim 18**: there is no antecedent basic for the limitation "**the** bandwidth" recited in **line 9, line 10**, and **line 13**, respectively.

Examiner suggests changing this limitation to "**a** bandwidth".

g) **In Claim 22**: there is no antecedent basic for the limitation "**the** bandwidth manager" recited in lines 4-5.

Examiner suggests changing this limitation to "**a** bandwidth manager".

h) **In Claim 33**: there is no antecedent basic for the limitation "the **downlinks**" recited in line 4.

Examiner suggests changing this limitation to "the **downlink**".

i) **In Claim 38**: there is no antecedent basic for the limitation "**the** bandwidth" recited in **line 7** and **line 10**, respectively.

Examiner suggests changing this limitation to "**a** bandwidth".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 38** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 38 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are:

In lines 5-6, the Applicants claimed an expression as follows:

$UserFairShare_{Individual} = UserSubscribebBandwidth_{Individual} * AvailableBandwidth / Sum(UserSubcribedBandwidth_{Requesting})$.

However, there is no any definition relating to the variable "$UserSubscribebBandwidth_{Individual}$" in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1-8, 12-16, 21-28, 32-36** and **41-46** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Dail et al.* (US Patent No. 5,570,355) in view of *Kelly et al.* (US Patent Application Pub. No. 2002/0009058 A1), hereinafter referred to as *Dail* and *Kelly*, respectively.

a) **In Regarding to Claim 1:** *Dail* disclosed a method of allocating uplink bandwidth among user terminals in a communication system including an uplink *(see Fig7: upstream frame 700s; Fig.1: uplink from user terminals 107 to Central Office (Head-End) 109; and col.5 lines 28-29)*, the method comprising:

assigning fair shares of the uplink bandwidth allocated to one or more of the user terminals based on one or more of the system data loading, the terminal data loading and the user agreement terms *(see col.3 lines 51-64)*; and

releasing uplink bandwidth previously allocated to one or more of the user terminals based on one or more of the terminal data loading and the bandwidth release parameters *(see Figs.23 and 24; and col.22 line 32-col.23 line 31)*.

Dail fails to explicitly disclose the communication system is a satellite communication system; and

the method comprising assigning initial bandwidth allocations of the uplink bandwidth for one or more of the user terminals.

Kelly explicitly discloses such a satellite communication system *(see Fig.1: a communication from user 101 to Network Operations Center 113 via satellite 107);* and

Kelly also explicitly discloses such assigning initial bandwidth allocations of the uplink bandwidth for one or more of the user terminals *(see Fig.1: an uplink communication is from the 101 to the 113 via satellite 107; Para. [0027] in page 2; and Fig.7 step 703)*.

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a satellite communication system, as taught by *Kelly* with *Dail*, so that communication terminals located in large geographical areas can be communicated to each

other. The motivation for doing so would have been to provide a repeater such as a satellite to a communication system in a large geographical area effectively, and minimize costs to users thereby stimulate market acceptance *(see Kelly: Para [0009] in page 1)*. Thus, it would have been obvious to combine *Kelly* and *Dail* the invention as specified in the claim; and

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such assigning initial bandwidth allocations of the uplink bandwidth for one or more of the user terminals, as taught by *Kelly* with *Dail*, so that initial bandwidth allocations can be assigned to communication terminals and thereinafter an actual set of bandwidth allocations will assign to the communication terminals depending on their requirements. The motivation for doing so would have been to provide communication link efficiency because the link is enhanced by dynamically adapting to the uplink bandwidth requirements of the communication terminals. Therefore, it would have been obvious to combine *Kelly* and *Dail* the invention as specified in the claim.

b) **In Regarding to Claim 2:** *Dail* further disclosed said assigning initial bandwidth allocations comprises:

determining initial bandwidth needs at one or more of said user terminals in response to data activity at said one or more user terminals *(see col.3 lines 57-64: bandwidth allocation for a request from the station to the head end; and col.4 lines 44-57)*;

transmitting initial bandwidth requests from one or more of the user terminals to the bandwidth manager *(see col.4 lines 38-42)*; and

transmitting the initial bandwidth allocations to one or more of the user terminals *(col.13 lines 30-48: bandwidth assignment)*.

c) **In Regarding to Claim 3:** *Dail* further disclosed the uplink comprises at least one allocated signaling channel and wherein the step of transmitting initial bandwidth requests comprises communicating over the allocated signaling channel *(see Fig.7 and col.14 lines 18-29).*

d) **In Regarding to Claim 4:** *Dail* further disclosed the step of transmitting initial bandwidth requests comprises communicating over the initial bandwidth allocation in the uplink *(see Fig.7: slots 706 and 722 (hence, the terminals can communicate with the controller via these signaling slots)).*

e) **In Regarding to Claim 5:** *Dail* further disclosed the communication system is arranged to transmit data via a fixed bandwidth, and

wherein the method further comprises identifying the need for a fixed bandwidth based on the data to be transmitted over the communication system *(see col.3 lines 52-64: ATM applications).*

f) **In Regarding to Claim 6:** *Dail* further disclosed the step of transmitting initial bandwidth requests comprises transmitting initial minimal bandwidth allocation requests based on the data to be transmitted over the communication system *(see col.5 line 5-27: minimum guaranteed bandwidth).*

g) **In Regarding to Claim 7:** *Dail* further disclosed the step of transmitting initial bandwidth requests comprises transmitting a request from a first terminal of said user terminals for a fixed amount of bandwidth at the first terminal's allocated fair share of the uplink bandwidth based on the data to be transmitted over the communication system *(see co.7 lines 40-60: TDMA; and col.26 lines 38-59: the existing first call at station 107).*

h) **In Regarding to Claim 8:** *Dail* further disclosed the step of assigning fair shares of the uplink bandwidth comprises transmitting a request from a first terminal of said user terminals for bandwidth at the first terminal's fair share of the uplink bandwidth based on the data to be transmitted over the communication system *(see col.1 lines 34-38: TDMA (hence a request from a first terminal of the user terminals); col.3 lines 51-54; and col.4 lines 44-57).*

i) **In Regarding to Claim 12:** *Dail* further disclosed the step of transmitting the initial bandwidth allocations to the one or more user terminals further comprises the step of transmitting the initial bandwidth allocations from the bandwidth manager *(see col.3 lines 38-57).*

j) **In Regarding to Claim 13:** *Dail* further disclosed the communication system comprises a downlink and wherein the step of transmitting the initial bandwidth allocations to the one or more user terminals comprises communicating over a signaling channel allocated in the downlink to said one or more user terminals *(see Fig.9; and col.5 lines 28-40).*

k) **In Regarding to Claim 14:** *Dail* further disclosed further comprising allocating a fixed bandwidth to a first terminal of the user terminals in response to a request for a fixed bandwidth from the first terminal to the bandwidth manager *(see col.1 lines 34-38: TDMA; and col.16 lines 34-67).*

l) **In Regarding to Claim 15:** *Dail* further disclosed further comprising allocating to the first terminal a fixed amount of bandwidth at the first terminal's allocated fair share of the uplink bandwidth based on the data to be transmitted over the communication system *(see col.1 lines 34-38: TDMA; col.3 lines52-64: fixed length time slot)*

m) **In Regarding to Claim 16:** *Dail* further disclosed further comprising allocating to the first terminal bandwidth at the first terminal's fair share of the uplink bandwidth based on the data to be transmitted over the communication system *(see col.1 lines 34-38: TDMA; col.4 lines 44-57).*

n) **In Regarding to Claim 41:** *Dail* disclosed all aspects of this claim as set forth in claim 1.

Dail fails to explicitly disclose the uplink bandwidth comprises a combination of frequency-division multiplexing (FDM) and time division multiplexing (TDM) data cells that are individual allocated to the one or more user terminals.

Kelly explicitly discloses such a combination of frequency-division multiplexing (FDM) and time division multiplexing (TDM) data cells that are individual allocated to the one or more user terminals *(see Para. [0027] in page 2: multiple carriers (hence FDM) and each of these carriers is a TDMA).*

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a satellite communication system, as taught by *Kelly* with *Dail*, so that uplink bandwidth in a satellite communication system can be allocated to communication terminals properly. The motivation for doing so would have been to employ several transmission schemes in a satellite communication system *(see Kelly: Para [0027] in page 2).* Thus, it would have been obvious to combine *Kelly* and *Dail* the invention as specified in the claim.

o) **In Regarding to Claim 42:** *Dail* disclosed all aspects of this claim as set forth in claims 1 and 41.

Dail fails to explicitly disclose each of the FDM/TDM data cells is allocated separately and contains one of a portion of IP data transfer by a satellite and a bandwidth allocation request.

Kelly explicitly discloses such a each of the FDM/TDM data cells is allocated separately and contains one of a portion of IP data transfer by a satellite and a bandwidth allocation request *(see Fig.1: Internet 105; and Paras. [0027] – [0029] in page 2: to provide initial access and to request further bandwidth required; offers Internet access to the user terminal 101; and IP multicast service)*

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a each of the FDM/TDM data cells is allocated separately and contains one of a portion of IP data transfer by a satellite and a bandwidth allocation request, as taught by *Kelly* with *Dail*, so that a user terminal can be accessed to Internet. The motivation for doing so would have been to provide high-speed and cost-effective Internet access to user terminals in a satellite communication system *(see Kelly: Para [0029] in page 2)*. Thus, it would have been obvious to combine *Kelly* and *Dail* the invention as specified in the claim.

p) **In Regarding to Claim 43:** *Dail* disclosed all aspects of this claim as set forth in claim 1.

Dail fails to explicitly disclose the uplink bandwidth further comprises at least one frequency division corresponding to an allocated frequency spectrum and a frequency capability of the one or more user terminals.

Kelly explicitly discloses such at least one frequency division corresponding to an allocated frequency spectrum and a frequency capability of the one or more user terminals *(see*

Figs. 6a and 6b: FREQ field 601J in packet 601, and Frequency Table 603g in packet 603; Paras. [0120] and [0123]: Frequency Table 603g (hence, frequency spectrum), which used to transmit on each of the return channels (uplink channels) in the group).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such at least one frequency division corresponding to an allocated frequency spectrum and a frequency capability of the one or more user terminals, as taught by *Kelly* with *Dail*, so that uplink bandwidth in a satellite communication system can be allocated to communication terminals properly. The motivation for doing so would have been to avoid interruptions of network operations, or transmission on a wrong return channel frequency around a switch over a point in a satellite communication system *(see Kelly: Para [0123] in page12).* Thus, it would have been obvious to combine *Kelly* and *Dail* the invention as specified in the claim.

q) **In Regarding to Claims 21-28, 32-36** and **44-46:** these claims are rejected for the same reasons as Claims 1-8, 12-16 and 41-43, respectively because the claimed subject matters of the method in Claims 1-8, 12-16 and 41-43 are the same as that of apparatus in claims 21-28, 32-36 and 44-46.

7. **Claims 41** and **44** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Dail et al.* (US Patent No. 5,570,355) in view of *Kelly et al.* (US Patent Application Pub. No. 2002/0009058 A1) as applied to claims 1 and 21 above, and further in view of *Dutta* (US Patent No. 5,982,761).

a) **In Regarding to Claim 41:** *Dail* disclosed all aspects of this claim as set forth in claim 1.

Dail fails to explicitly disclose the uplink bandwidth comprises a combination of frequency-division multiplexing (FDM) and time division multiplexing (TDM) data cells that are individual allocated to the one or more user terminals.

Dutta explicitly discloses such a combination of frequency-division multiplexing (FDM) and time division multiplexing (TDM) data cells that are individual allocated to the one or more user terminals *(see col.4 lines 49-64: return channel frequency assignments and slot timing for both signaling and messaging modes of return channel communication).*

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a satellite communication system, as taught by *Dutta* with *Dail*, so that uplink bandwidth in a satellite communication system can be allocated in different return channels of a satellite communication system. The motivation for doing so would have been to employ several transmission schemes in a satellite communication system. Thus, it would have been obvious to combine *Dutta* and *Dail* the invention as specified in the claim.

b) **In Regarding to Claim 44:** this claim is rejected for the same reasons as Claim 41 because the claimed subject matters of the method in Claim 41 are the same as that of apparatus in claim 44.

Allowable Subject Matter

8. **Claims 9-11, 17-20, 29-31, 37, 39** and **40** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. **Claim 38** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Remarks

10. Applicant's arguments dated on 10/14/2004 with respect to amended claims 1-40 and new claims 41-46 have been considered but are moot in view of the new ground(s) of rejection.

11. In order to response properly to the independent amended claims, the Examiner decides to add a new reference, *Kelly et al.* (US Patent Application Pub. No. 2002/0009058 A1) and *Dutta* (US Patent No. 5,982,761), which are new discovered references. Therefore, new ground(s) rejections are applied as set forth in the Office Action.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The examiner can normally be reached on M-F: 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chau Nguyen** can be reached on **571-272-3126**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by: _____
Anthony T. Ton
Patent Examiner
February 14, 2005

PHIRIN SAM
PRIMARY EXAMINER